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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,582	07/15/2003	Gordon Bruce Scarth	TR-190-US	6889

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EXAMINER	
PAK, SUNG H	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,582	SCARTH ET AL.	
	Examiner	Art Unit	
	Sung H. Pak	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☒ Claim(s) *20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/15/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Preliminary amendment filed 3/23/2005 has been considered.

Claim Objections

Claim 18 is objected to because of the following informalities: the claim recites, "...described in 11". This recitation should be changed to "...described in claim 11". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7-13, 15, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ko et al (US 6,600,594 B1).

Ko discloses an optical device with all the limitations set forth in the claims, including: a system and method for operating plurality of electronic variable optical attenuators controlled by a microcontroller, comprising means for selecting one eVOA from the plurality of the eVOAs at a time (Fig. 7; column 6 lines 12-14); means for operating the selected eVOA according to a predetermined method of controlling the selected eVOA within a time slice allocated for the

selected eVOA (column 7 lines 6-11); means for repeating the steps until all variable optical attenuators from the plurality of the eVOAs have been selected (Fig. 7);

wherein the means for selecting and operating further comprises a processor for calculating the attenuation of the selected eVOA according to the predetermined method of controlling the selected eVOA during the allocated time (column 6 lines 14-19); a monitor signal processing controller for measuring power of an optical signal at the selected eVOA (column 6 lines 34-41); a microprocessing controller for changing an operating attenuation of the selected eVOA in response to a signal received from the processor (column 6 lines 20-25); a means for providing communications between the processor, the monitor signal processing controller, and the microprocessing controller (Fig. 4-5; column 6 lines 7-11);

wherein monitor signal processing controller for measuring power of an optical signal at the selected eVOA comprises a means for measuring the optical signal power at the output of an eVOA (Fig. 4);

wherein the step of operating the selected eVOA comprises setting said eVOA attenuation to a predetermined fixed value, which would be less than minimum attenuation value if the measured power is greater than the target power for the selected eVOA (column 6 lines 29-46);

wherein the microprocessing controller comprises a means for determining a required attenuation level and a means for setting the eVOA at said attenuation level (column 6 lines 14-19); wherein the microprocessing controller further comprises means for adjusting and updating attenuation of the selected eVOA (column 6 lines 20-25);

wherein the device is operated within an optical network system (column 2 lines 32-37).

Further, Ko discloses a method of operating the plurality of eVOA comprising the steps of operating the means as discussed above;

wherein the steps of selecting the eVOA from the plurality of eVOAs comprises continuously cycling through the eVOAs (Fig. 7);

wherein the step of cycling comprises cycling through the eVOA in a prescribed order (Fig. 7);

wherein the step of operating the selected eVOA comprises measuring an optical signal power of the optical signal at the selected eVOA (Figs. 4, 7);

wherein the step of measuring the optical signal power comprises measuring the optical power at the output of the selected eVOA (Fig. 4);

wherein the step of operating the selected eVOA comprises changing the attenuation of said eVOA in one or more variable size intervals so that the power of the optical signal substantially equals to the taget power, the size of the interval being a function of the measured power and the target power (column 9 lines 9-42: attenuation is changed at discrete level via calculated steps/ number of pulses);

wherein the step of operating the selected eVOA comprises measuring the optical signal power at the output of the selected eVOA and if the optical signal power is below a predetermined level, setting the attenuation of the selected eVOA to above the predetermined level and modulating the attenuation by decreasing and increasing the eVOA attenuation in finite steps (column 9 lines 9-42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-6, 14, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko et al (US 6,600,594 B1) in view of Beine et al (US 6,304,347).

Ko discloses an optical device with claimed limitations as discussed above, except it does not explicitly teach the use of a time for generating an allocated time slice for monitoring and controlling the selected eVOA.

On the other hand, Beine discloses the use of a timer for generating allocated time slice for monitoring and controlling VOAs (column 38 lines 28-30). The use of a timer is considered advantageous and desirable because it allows for precise and more efficient VOA control algorithm, which increases the over efficiency of the optical communications system.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Ko device to have a timer for generating allocated time slice for VOA monitoring and control.

Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko et al (US 6,600,594 B1).

Ko discloses an optical device with limitations as discussed above. Although Ko discloses that the step of changing the attenuation of selected eVOA comprises determining the attenuation intervals based on measured signal power and the predetermined target power, it does not explicitly state that the determination is made based on a linear or non-linear function of the measured signal power and the target power.

However, a method steps of calculating modulation parameters based on linear or non-linear functions of plurality of measured parameters is well known and common in the optical communications device art. The use of linear or non-linear functions of measured parameters are considered advantageous and desirable because it allow for precise and predictable modulation of optical signals in optical communications device. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Ko to have a method step of determining the attenuation level based on linear or non-linear function of the measured signal power and the target signal power.

Allowable Subject Matter

Claims 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: as discussed above, a method of operating plurality of eVOAs is known in the art. However, none of the prior art fairly teaches or suggest such a method wherein the step of modulating the eVOA's attenuation in finite step by determining: 1) maximum number of steps for decreasing and increasing attenuation, 2) attenuation value per such step, and 3) predefined protection attenuation value, as claimed in the instant application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sung H. Pak
Patent Examiner
Art Unit 2874

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